

ATWATER: ANCIENT PROCESSES

people of the past 5,000 years. Too late to observe a stream at the site of the Bay, some of these people may nevertheless have deduced its former presence; perhaps, like Gilbert and Lawson, they read ancient history from soggy middens and drowned topography.

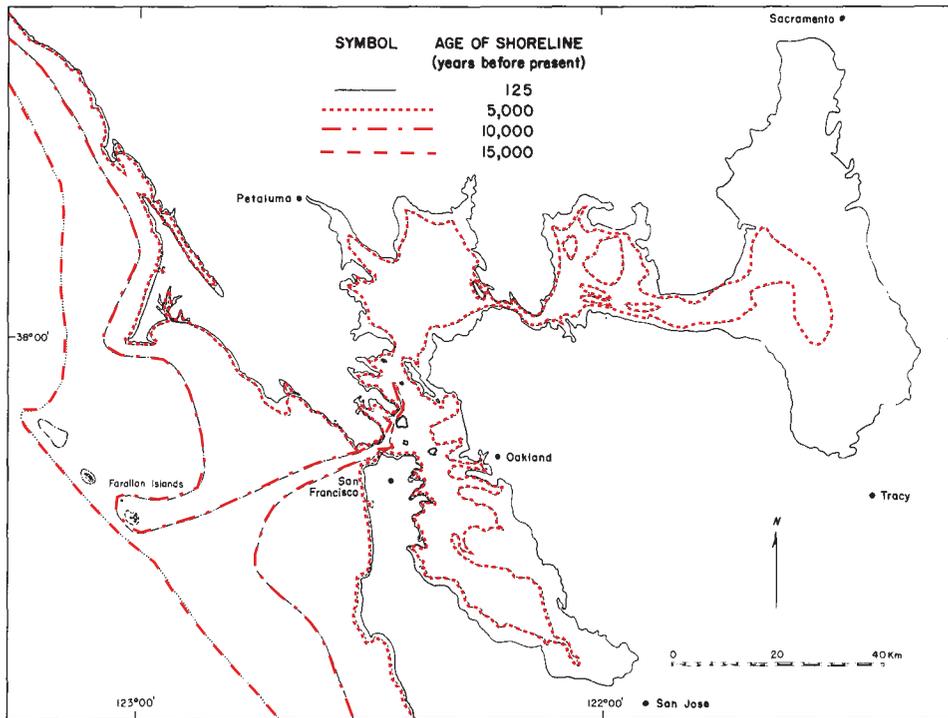


Fig. 6. Approximate high-tide shorelines near San Francisco during the past 15,000 years. The 125-year-old shoreline, based on compilations by Gilbert (1917:76) and Nichols and Wright (1971), denotes the landward edge of tidal marshes before human encroachment or, where no marsh was present, the high-water line circa 1850. Locations of older shorelines are estimated by projecting sea levels of the past 15,000 years onto the land surface inundated by the growing estuary during this time. We assume the following sea levels, expressed relative to present mean sea level (Fig. 5; Flint 1971:321): 5,000 years ago, -8 m; 10,000 years ago, -55 m; and 15,000 years ago, -100 m. Topography of the ancient land surface east of the Golden Gate follows reconstructions by Goldman (1969, pl. 3), the U. S. Army Corps of Engineers (1963, pls. 6-7), Carlson et al. (1970), and B. Atwater, S. D. McDonald, and D. R. Nichols (unpublished data). Because of variations in abundance and quality of boreholes and acoustic profiles, these topographic reconstructions are most accurate for the southern arm of the estuary and least accurate for open-water areas of the northern part of the estuary. Topography of the ancient land surface west of the Golden Gate is inferred mostly from modern water depths as shown on NOS Nautical Charts 5402 and 5502. Local adjustments uncontrolled by boreholes or subbottom profiles attempt to correct for differences between modern bathymetry and ancient topography. Location of the 10,000-year-old shoreline between San Francisco and the Farallon Islands depends greatly on such adjustments and is therefore extremely speculative.

Source: Atwater, 1977